

REMARKS

Claims 4-8 remain pending.

Claim Amendments

By this amendment, claims 1-3 and 9-11 directed to the non-elected invention are cancelled.

Rejection under 35 USC 102(b) over Tanaka et al

Claims 4-8 and 12-16 stand rejected under 35 USC 102(b) as being anticipated by Tanaka et al '500 (which corresponds to U.S. Patent 5,910,567). This rejection respectfully is traversed.

The disclosed method comprises adding protease, a surfactant, and water to natural rubber latex to deproteinize the latex.

Tanaka et al teaches the use of a surfactant selected from the group consisting of (a) an anionic surfactant, (b) a non-ionic surfactant, (c) an amphoteric surfactant, and (d) any combination thereof. See column 4, lines 9-12 of the '567 patent. However, the reference fails to teach or suggest the use of a water-soluble polymer (as defined) having a principal chain comprised of 100 to 5,000,000 carbon atoms as now required by claims 4 and 5.

Further, applicants do not intend that the water-soluble polymer also function as a surfactant. The Examiner's attention is directed to the specification at page 14, lines 8-9 wherein the

additional presence of a surfactant is provided for *apart from* the water-soluble polymer.

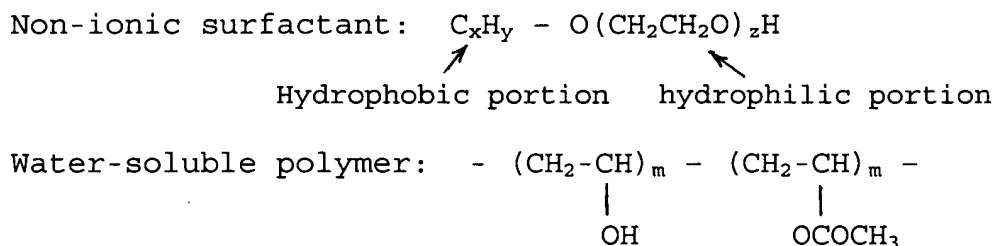
The Examiner takes the position that the features upon which applicants rely are not stated in the claims. The Examiner further states that the surfactant recited in the reference contains polyalkylene chains with 2 to 4 carbons per group and 1 to 50 groups per chain (amounting to 2 to 200 carbons per chain). The Examiner further concludes that this is consistent with applicants' claims, such that the surfactant, in effect, meets the water-soluble limitation of the claims.

In response, applicants note that the water-soluble polymer recited in their claims does not contain the polyalkylene chains of Tanaka. Tanaka recites nonionic surfactants which contain alkyl groups as described at column 5, lines 18-28 of U.S. Patent No. 5,910,567, but which are not water-soluble polymers. A surfactant is an amphipathic substance having both a hydrophilic portion and a hydrophobic portion. Although the Examiner employs the phrase "water-soluble polymer surfactant" to describe the surfactant of the reference, this is an unsubstantiated conclusion on the part of the Examiner as the reference makes no reference to such water-solubility.

To the contrary, claim 4 defines the water-soluble polymer as a polymer having at least one hydrophilic functional group to

provide the requisite water-solubility. The water-soluble polymer is comprised of a chain of repeating hydrophilic units, without the presence of a hydrophobic portion.

The water-soluble polymer of applicants' invention and the surfactant of the reference may be compared as follows:



As further evidence of patentability, the Examiner's attention is directed to Comparative Examples 4 and 5 of applicants' specification wherein a polyoxyethylene oleyl ester and polyoxyethylene sorbitan oleyl ester as a nonionic surfactant, respectively, are used in place of the water-soluble polymer. The results of Table 4 show that problems arose such as liquid dripping and severe uneven films. The use of the surfactant is thus not effective for providing heat sensitizing properties and film-forming properties to natural rubber latex, which are the advantages provided by the claimed invention.

In view of the above, despite the Examiner's assertion, it is clear that the cited reference fails to disclose or suggest the claimed invention. The rejection is thus without basis and should be withdrawn.

Rejection under 35 USC 103(a)

Claims 4-8 stand rejected under 35 USC 103(a) as being unpatentable over Tanaka et al '459 in view of and Tanaka et al '500. This rejection respectfully is traversed to the extent deemed to apply to the claims as amended.

The Tanaka et al '459 reference is directed to a process for producing raw rubber from deproteinized natural rubber. The process comprises coagulating rubber particles in a deproteinized natural rubber latex by (1) adding a specific nonionic surfactant to the deproteinized natural rubber latex, and heating the latex to a temperature not lower than the cloud point of the nonionic surfactant; or alternatively, (2) adding a coagulation assistant selected from the group consisting of (a) an ionic surfactant, (b) an amphoteric surfactant, (c) a nonionic surfactant, (d) a nonionic or amphoteric oligomer or polymer, and (e) an anionic oligomer or polymer, to the deproteinized natural rubber latex, and then recovering the coagulated rubber particles.

However, the reference is silent with respect to the addition of a water-soluble polymer as specified by applicants' claims.

Also, it is noted that the nonionic surfactant or the coagulating assistant disclosed by the reference is added to the deproteinized natural rubber latex. This step is in contrast to

applicants' method of adding the water-soluble polymer of the claimed invention to the natural rubber latex together with a protease in order to deproteinize the rubber latex. As a result, Tanaka fails to disclose or suggest the claimed invention.

The cited secondary references fail to overcome the deficiencies of the Tanaka reference. More specifically, the secondary Tanaka reference fails to suggest the addition of the water-soluble polymer recited in amended claims 4 and 5. It is also illogical to combine the teachings of the secondary references with those of Tanaka '459 given the fact that Tanaka '459 treats a deproteinized rubber.

In the Official Action, the Examiner states that Tanaka et al ('459) at column 1, lines 48-52 "incorporates the teaching of EP 584597 of preparing the deproteinized natural rubber latex by treating the natural rubber latex with a protease and a (polymeric) surfactant consistent with that taught by the secondary reference."

In response, applicants have above distinguished the "polymeric surfactant" from the water-soluble polymer recited in the claims. Also, the use of the surfactant has been shown to be unsuccessful in providing heat sensitizing properties and film-forming properties to natural rubber latex as provided in applicants' invention.

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As such, the claimed invention is neither disclosed nor suggested by the cited references, taken either in singly or in combination. The rejection is thus without basis and should be withdrawn.

The application is accordingly believed to be in condition for allowance, and an early indication of same is requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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